

# SCIENCE & GOVERNMENT REPORT

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## US Science Can Have It All, Academy Report Asserts

The National Academy of Sciences last week presented a sweet pipedream that invites politics to issue a blank check to assure that America is unsurpassed in science. Sounding a strong chauvinist tone, the Academy asserted that guaranteed support is needed to keep the nation No. 1 in the post-Cold War era of international economic competition.

Inspired by the increasingly shaky state of federal appropriations for science, the Academy plan aims to protect research from the neglects and unpredictabilities of politics. To accomplish this, it recommends, the US government should commit itself to financing American equality, if not "clear leadership," in all major fields of science. The choice of equality or leadership would be made by government officials with the advice of scientists, according to the Academy's proposal.

For fields that underpin key industries, or that stir the national imagination, or invigorate other sciences, "clear leadership" would be the goal. Examples offered are condensed-matter physics, astronomy, and molecular biology. Otherwise, the report says, the US could settle for being on a par with the world's best.

Under the Academy's formula for a new federal compact with science, scientists would assess America's standing in the scientific disciplines, and the federal government would adjust spending in each field as necessary. To promote objectivity, the panelists would include scientists from other fields as well as scientists from abroad and "users" of research.

With dispassionate professional judgment ruling the process, the Academy suggests, gone would be the messiness and uncertainty of the current appropriations process, replaced by a commitment to "national goals" for which the White House and Congress would provide the needed funding. Presented as a "framework," the proposal is not accompanied by a discussion of the legislative and administrative underpinnings that would be necessary to put these arrangements into effect.

Academy officials emphasized that this scheme does not require additional money, thus departing from the style of their prior forays into science-policy affairs. In fact, in a hypothetical passage, the report they issued conjectured that an assessment panel might find the US leading the world in a field designated for mere neck-and-neck status. In that case, the report states, "the panel might recommend reductions in funding, which could then be applied to areas

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## Q.&A. With Grant Swinger On R&D Under Bill Clinton

*Dr. Grant Swinger, Director of the Center for the Absorption of Federal Funds, was interviewed by SGR Editor Greenberg on June 29. Following is the text, transcribed and edited by SGR.*

**SGR.** What changes have you made here in response to the policies of the Clinton Administration?

**Swinger.** We have reoriented to keep up with the times. In the boom days of science, our motto used to be "As Long As You're Up, Get Me a Grant."

**SGR.** You've changed the Center's motto?

**Swinger.** Yes. Science is down, and technology is the thing. Now our motto is "From the CRADA to the Grave."

**SGR.** "CRADA to the Grave?"

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## In Brief

Official misconduct rulings against NIH grantees and employees and those of other Public Health Service agencies used to be available only through cumbersome Freedom of Information requests. Now, under a policy of the recently established Office of Research Integrity, they're published in the *Federal Register*, where an initial batch of 14 cases was reported in the June 21 edition, with offenders and misdeeds identified. All involved either fabrication or falsification of lab data or plagiarism in grant applications.

Established in 1990 in response to the tough job market, the Young Scientists' Network now claims some 3000 members around the country. Major aims of the organization: "To let the press, public, and government officials know that there is no shortage of scientists," and to help members find "traditional and non-traditional jobs." Founder Kevin Aylesworth, a physics PhD, is currently working as a legal assistant: He's at: 2450 Massachusetts Ave., Apt. 404, Cambridge, Mass. 02140; tel. 617/491-9872; Internet: [kda@pinet.aip.org](mailto:kda@pinet.aip.org)

The House Appropriations Committee has an assignment for the next Director of NIH, widely rumored to be Harold Varmus, of the University of California, but so far, no official word from the White House. In its annual report, the Committee directs the next NIH chief to review the intramural program, which it says is bursting the seams on the NIH campus at a time when funds for expansion are short.

## ... Senator Rockefeller Puts on a Discursive Hearing

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requiring additional support." That mayhem would ensue if, for example, chemistry were directed to yield dollars to mathematics, or botany to physics, is not discussed in the report.

Signifying an important public event in its operations, the Academy invited the press to drinks and lunch at headquarters on June 21 to hear about the report. Following curried boneless chicken breast, salad, and ices, served to 50 guests and staff by tuxedoed waiters, Academy President Frank Press spoke admiringly of the report as a major contribution to public policy, the last science-policy report of his 12-year presidency, which ended June 30.

He then introduced Phillip A. Griffiths, Director of the

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**Science, Technology, and the Federal Government: National Goals for a New Era**, 54 pp., available without charge from: NAS, Committee on Science, Engineering, and Public Policy, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-2424; fax 202/334-2419.

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Institute for Advanced Study, Princeton, Chairman of the 19-member Committee on Science, Engineering, and Public Policy. COSEPUP, as it's called, is an elite body that embraces the three major components in the Academy complex, the Academy of Sciences, the Academy of Engineering, and the Institute of Medicine.

Echoing basic points in the report, Griffiths stressed that national well-being depended on a complex, interacting system of which science was merely a part, but an essential one that is bound to become more important as science, technology, and industry become increasingly intertwined. "Only by being among the leaders in all the major areas of science can you take advantage of advances that occur wherever they occur," he said, recalling that within days after high-temperature superconductivity was reported in Switzerland, "the results were duplicated in laboratories across the country." With similar breakthroughs inevitable, he said, we must be ready.

While technology remains primarily an industrial responsibility, even with new federal programs aimed at assisting industry, Griffiths observed, basic science has nowhere to turn but to Washington for continued support. But with the Cold War gone as a major rationale for that support, he explained, a new rationale is needed. The Academy Committee, he said, found it in national goals linked to industrial needs, health care, and other enterprises that rely on scientific research.

Asked whether reactions had come in from the Washington science-policy circuit, Griffith said that briefings on the report had been presented to White House Science Advisor John Gibbons and Rep. George Brown (D-Calif.), Chairman of the House Science, Space, and Technology Committee. He said he "got the feeling" that they felt "this could be a

contribution" to current deliberations on federal support of research.

On June 22, Press and Griffiths, invited to discuss the report, were witnesses before the Science, Technology, and Space Subcommittee of the Senate Committee on Commerce, Science, and Transportation, with Senator John D. (Jay) Rockefeller (D-W.Va.) presiding. The only other member attending from the 10-member Subcommittee was Senator Conrad Burns of Montana, the ranking Republican, who was quickly in and out of the 90-minutes of diverse and at times opaque discussions on a wide range of topics.

Rockefeller opened the proceedings by declaring his disappointment with the Clinton Administration's support of small business. The discussion drifted to R&D policies, with Press noting a major change of government attitude since he served as White House Science Advisor under Jimmy Carter. His attempts at that time to promote research collaboration among the Big Three auto producers were thwarted by fears of anti-trust regulators. Today, he said, there's no such problem.

Rockefeller asked whether Great Britain's "budget constraints are radically different from ours." Griffiths observed that "it's a smaller country," adding that he didn't feel qualified to say more. He and Press several times stressed that the Academy's recommendations would not entail more money.

Rockefeller, off on a lengthy soliloquy, noted that he had a cousin who couldn't find work as an actress, but that as Rockefeller, she would get by. The trail then led to an inquiry about the state of morale among young scientists.

Press replied that "it's not very good," and that among postdocs, "morale is terrible."

Senator Burns complained of attempts to shut down a platinum and palladium mine in Montana, and also expressed concern about "research on the shelf" that goes unused.

Rockefeller brought up the Space Station, asking how it would fit into the Academy's framework for supporting research. Press replied that it wasn't a scientific project and shouldn't be charged to science. Rockefeller then switched

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## In Quotes: Rep. Boehlert, Tormentor of the SSC

*If any one Congressman can be credited with building the case that underpinned the 280-150 House vote June 24 to kill the Superconducting Super Collider, it's Rep. Sherwood Boehlert, a New York Republican, for whom the SSC has been an obsession since it was first proposed in the mid-80's. Taking at face value the Department of Energy's assurance that the SSC would be an "international facility," Boehlert suggested a site straddling the NY-Canadian border, actually far from his district, a rural area near the center of the State. After DOE dismissed the site as unacceptable, Boehlert became an attentive student and sharpshooting critic of the SSC. The following is from his comments on the House floor just prior to the House vote.*

SSC supporters have matched their overblown promises concerning costs with overblown descriptions of the project's benefits. Most recently, they have touted the SSC as a cancer research facility because the project could be—just could be—used for an experimental treatment known as proton beam therapy. But guess what? For the cost of the collider, we could build 500 proton beam facilities....

Then there's the claim that the SSC will help our economy. But collider research is the most indirect route to developing commercially useful techniques

and products. Perhaps that's why foreign governments have been unwilling to ante up. The collider isn't even a useful way to develop commercially viable superconducting magnets because the machine uses such uniquely expensive technology....

While the Federal agencies that train and fund most of the scientists in this country are turning down more than two-thirds of their applications, the SSC—a single project in a single subfield of science—the SSC is eating up \$11 billion. And to add insult to injury, we now find that some of this \$11 billion is being used for such urgent expenditures as buying and insuring great art works for the walls of SSC managers' offices. Whatever happened to C.P. Snow's concern that art and science had become two unbridgeably separate cultures?...

This is a project that started out in 1985 with a projected cost of \$4.4 billion. Here we are in 1992, less than 20 percent completed, and the projected cost now exceeds \$11 billion.... The House in 1990 overwhelmingly, by a bipartisan vote, approved a floor of 20 percent foreign contribution ... and Japan is supposed to be the biggest contributor. Guess what? We have not seen the first yen from the Japanese. As a matter of fact, of the more than \$2 billion projected for foreign contributions, we only have \$65 million in hand.

## Support of Science

(Continued from Page 2)

to biomedical research, asking whether additional emphasis should be placed on disease prevention.

With a note of exasperation breaking through his courteous manner, Press said, "We're straying from our report," adding that "we can't answer everything."

Rockefeller then suggested that the witnesses cast themselves as "king for a day," and describe how they would spend an additional \$2 billion for research. Press recalled that President Carter had asked him how he would spend an additional \$100 million on research. In response, Press said, he invited the Cabinet members to send in suggestions, and "the best proposals were funded." Rockefeller asked for details. Press said he didn't recall the details from 14 years ago. The hearing proceeded along those lines until Rockefeller, the only Senator present, called a halt.

An irony of the Academy report is that it proposes a formula for national scientific supremacy when the conduct of scientific research is rapidly going international. Furthermore, the recommendations come at a time the US government is begging funds abroad for the Superconducting Super Collider, while proclaiming the virtues of international collaboration in science. The Academy, of course, is legally a private organization, at liberty to pronounce as it pleases, but heretofore, it has been in the vanguard of scientific

internationalism.

In discussing the financing of megaprojects, the report actually takes a narrow view of international collaboration, stating, "If the area of the megaproject was one in which the United States chose only to be among the leaders, participation would almost certainly depend on international collaboration and cost sharing.

"For an area where clear leadership is justified," the Academy report continues, "the United States might choose to pursue a megaproject even without international partners." It may be assumed that this dissection will be recalled when foreign ministries hear the rattling of the tin cup for R&D projects on American soil.

Finally, absent from the Academy report is any reference to a 1976 Act of Congress which foreshadowed the Academy's proposed formula for federal underwriting of science. Titled the National Science and Technology Policy, Organization, and Priorities Act, it opens by declaring that "the general welfare, the security, the economic health and stability of the Nation, the conservation and the efficient utilization of its natural and human resources, and the effective functioning of government and society require vigorous, perceptive support and employment of science and technology in achieving national objectives...."

Though it's the law of the land, virtually no one today recalls its existence. The reason, of course, is that, like love, support of science cannot be commanded.—DSG

## ... Getting in Step with the Clinton Administration

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**Swinger.** Yes. Cooperative Research and Development Agreements, thousands of them, between government laboratories and anybody. Incidentally, if you want one, let me know. They're handing them out like half-price pizza coupons. They let you rummage around the government labs on the slight chance that there's something useful there, or maybe they can do some work for you.

Anyway, we've reoriented. Technology, productivity, competitiveness, strategic alliances, conversion. They're hot with the Clinton crowd.

**SGR.** You've reoriented toward what?

**Swinger.** To get in step with the trend. I'll read from our brochure on the services that we provide: "The Center has formulated a programmatic content that is in consonance with both a competitive strategic vision and the institutional resources available for the purpose of engaging in and contributing to the fulfillment of vital national needs." That statement goes over nicely with government program managers. It seems to reassure them.

**SGR.** Be specific. What do you do here?

**Swinger.** Let's start with our manpower program. The country has thousands and thousands of postdocs who can't find work. Some have been around so long that they're nearing retirement. Thousands more are in pipeline. This is a great but underutilized national resource. A waste of talent. Right?

**SGR.** Obviously.

**Swinger.** We are under contract to make use of this resource. For example, in our Postdoc Temp program, we send them into the schools to encourage kids to pursue careers in science and engineering. You know, that's a national goal—more scientists and engineers.

**SGR.** Yes, but—

**Swinger.** I know what you're thinking. But that's not the responsibility of the particular government agency that we're working for. I assume it's the responsibility of another agency. Obviously there's a need for a coordinating mechanism. But a national goal is a national goal.

**SGR.** What else do you do?

**Swinger.** As I mentioned, technology. But not in the sense of technological development. We work at the policy level.

**SGR.** Work for whom?

**Swinger.** Oh, there's no end of customers interested in technology policy. Many organizations want to influence policy, and, as usual, reports are a big item. We write them to order or provide them off the shelf, depending on the circumstances. And we've got some great titles all ready to go, like, "New Horizons, New Visions: Serving the Nation." Or, "Strategies for Change: Technology in a Competitive Era." And then, we've got, "Technology, Growth, and Transition: The New Alliance." Another one is, "Options, Opportunities, and Change for the New Century."

You understand, these are titles waiting to be put on reports, when the reports are ready, that is.

**SGR.** What's the process for doing reports?

**Swinger.** That's something that's been fairly standard for a long time, regardless of the subject. I think it dates back to the Cold War, when national security was big business. We work with the customer and guide them in the following steps. The first thing is to put together a working party to sketch out the parameters of the report, and then a task force to review their product. Maybe you add in an advisory committee or some consultants. Depends. And then we're at the stage where the customer appoints a committee that reviews the work of the working party, the task force, and so on. It's a long process, with many conferences and drafts. When it's all done, our staff people dash off a report. Or maybe it turns out that we already have the goods in the files. You know, they're all so much alike that it's hard to tell them apart.

And besides, just between us, no one reads the stuff. I wouldn't say that if you've seen one, you've seen them all. But there are many similarities.

**SGR.** What else?

**Swinger.** A big sideline in the report business is strategic plans. Many organizations say they feel the need for a strategic plan. So, they call us in, and we go in and we look around and we usually find that they already have a strategic plan, sitting in the files. No one knew about it. In fact, it usually comes as a big surprise. But it doesn't matter. They still want us to work up a strategic plan. I think it's become a matter of organizational pride. The feeling seems to be that you can't amount to much if you don't have a strategic plan. It's like a logo or a flag of your own.

**SGR.** I see. And what's your impression of how the Clinton Administration is getting on in science and technology?

**Swinger.** We're concerned about the many vacancies in senior policy positions in the research agencies nearly six months after he took office.

**SGR.** Unmade decisions piling up?

**Swinger.** Oh, no. Everything seems to be running smoothly, even with all those jobs unfilled. The National Science Foundation has been without a Director since April. No problem. The White House Science Office has been given the duties of the Space Council and lots of other chores, but with many fewer people on its staff overall. It's getting on fine. A dozen of the most distinguished scientists and engineers in the country used to meet every month to advise the Bush Administration. No such thing in the Clinton Administration. But it's hard to see that it makes any difference.

**SGR.** Then what are you concerned about?

**Swinger.** I worry that if this keeps up, it could give the game away.

**SGR.** Thank you, Dr. Swinger.



## ● NIH Still Baffled on Dealing With Feder and Stewart

Federal officials appeared to be having difficulty last week dealing with Ned Feder and Walter Stewart, the self-assigned misconduct hunters who were supposed to relocate to conventional duties May 10 at the National Institutes of Health.

Stewart put the reassignment schedule off pace by undertaking a well-publicized 33-day hunger strike that came to an end June 11 on doctor's orders. Looking alarmingly emaciated, Stewart thus spared the befuddled *apparatchiks* of NIH and its parent, the Department of Health and Human Services, from dealing with a problem that doesn't appear in their government manuals.

The two initially defied reassignment by dipping into their large stores of annual leave while summoning support from so-called whistle-blowers and sympathetic members of Congress. Soon under a barrage of puzzled and accusatory inquiries from Capitol Hill, HHS on June 15 placed Stewart and Feder on administrative leave with pay but without duties. Since then, their lawyers and the government's have been dickering about their fate, with indications that HHS is having second thoughts about their prescribed reassignments at NIH, Stewart to a laboratory and Feder to grants-review duty.

Such may be inferred from a letter dated June 24 from HHS General Counsel Harriet S. Rabb to the Stewart-Feder attorney, Gary Howard Simpson, and Jeffrey Ruch of the Government Accountability Project. Rabb's letter, summarizing their lawyerly conversations in the previous week, indicates job possibilities beyond the conventional duties to which they were reassigned in May.

"At our June 17 meeting," Rabb states, "I asked your clients to consider working on issues of financial conflict of interest in science, and you agreed to pass that request on to them. We are discussing those options with the relevant personnel in the Department."

Rabb also states, "I raised with you the notion that Mr. Stewart and/or Dr. Feder might well be productively employed in the Office of the Inspector General. From that locus, they might work on fraud questions and would experience the opportunity of a close working relationship with Congress. I do not now have authorization," Rabb continued, "to make an offer of work with the Inspector General for either or both of your clients, but would explore that possibility should there be any prospect of your clients' interest."

In response to an inquiry from SGR, Stewart declined the opportunity to serve with the Inspector General, explaining that "we are scholars, not investigators."

Rabb noted in her letter that SGR [of June 15] had recommended that private foundations bankroll Stewart and Feder for continued careers in misconduct studies. "If your clients are attracted to that possibility," she stated, "we would cooperate in efforts to make it happen."

Despite efforts to keep them out, Stewart and Feder held

prominent roles at a conference June 21-22 on the NIH Bethesda, Md., campus on "Plagiarism and Theft of Ideas," sponsored by the HHS Office of Research Integrity and the American Association for the Advancement of Science.

Though Stewart is renowned, or notorious, as the developer of a computerized, scanner-fed "plagiarism machine," neither he nor his partner were invited to participate in the conference. This was odd since a scheduled speaker, C.K. Gunsalus, Research Standards Officer, University of Illinois, Urbana-Champaign, delivered a paper about the use of their plagiarism program in a plagiarism case on campus.

In a "To Whom It May Concern" memo dated June 2, Gunsalus noted that last December, upon being invited to speak, "I suggested that Stewart and Feder should properly be asked to speak about the technology they had developed." Gunsalus added that she later "received the impression that ORI staff preferred that Stewart and Feder not even attend the conference, much less speak at it." In fact they did attend, were warmly received by most of the 100 or so persons there, and were called upon on several occasions to discuss their software.

SGR asked an organizer of the meeting, Mark S. Frankel, Director of the AAAS Scientific Freedom, Responsibility and Law Program, why Stewart and Feder were not on the program. He replied that the question of their participation arose after the program had been drawn up. Asked why the program was not redrawn, he said he didn't know. This is a matter that AAAS Executive Officer Richard Nicholson might examine.

Another oddity: a uniformed policeman stationed in the auditorium throughout the conference. Asked by SGR whether it was customary for a policeman to attend scholarly conclaves in the hall, he replied, No. Asked why he was there, he said he had been assigned. By whom? "The lieutenant." Further inquiry was unproductive.—DSG

## Job Changes & Appointments

**Ellis Mottur** has been appointed Deputy Assistant Secretary of Commerce for Technology and Aerospace in Trade Development. Mottur handled high-tech issues in the Clinton-Gore campaign and formerly was an Assistant Director of the Congressional Office of Technology Assessment and a committee staffer for Senator Edward Kennedy.

**Dale Brooks**, a retired Chevron engineer, has been appointed Managing Director of Government Relations at the new Washington office of the American Institute of Chemical Engineers, 1300 I St. NW, Wash., DC 20005.

**Charles E. Ludlam**, Chief Tax Counsel for the Senate Small Business Committee, has been appointed Vice President for Government Relations of the Biotechnology Industry Organization, an amalgam of the Industrial Biotechnology Association and the Association of Biotechnology Companies.

## Footnote to Berlin: The Koshland-Salk Follies

As 15,000 delegates gathered in Berlin June 7 for the 9th International AIDS Conference, they were joined by 1500 reporters searching for news, of which there was virtually none.

However, the journalistic capacity for amplifying any scrap of vacuous information at this annual ritual was demonstrated last year at the Amsterdam meeting. A shrewdly timed leak to *Newsweek* on the eve of that meeting spawned a flood of alarming reports about a "new" AIDS, a type not caused by HIV. The handful of reported cases was quickly shown to be of trivial public health significance. But "new" AIDS dominated the news from the Amsterdam meeting. The episode trumpeted *Newsweek's* existence, if not its credibility, and left a powerful lesson about the herd mentality of the press and the ease of inducing it to stampede.

Many attendees in Berlin were fearful that this year's explosion would be detonated by the renowned Jonas Salk.

For years, Salk, adored by the public and press, and scorned by many scientists, has used the conference to promote his theory that HIV infection could be treated with preventive vaccines. The evidence for such "immune enhancement" of infected individuals has been slim, at best. But in the weeks leading up to the Berlin conference, Salk coyly hinted that a double-blinded placebo-controlled study presented by his colleagues would provide dramatic proof of efficacy.

Share prices for Immune Response, the company which makes the vaccine and financed the study, had been fluctuating wildly on the NASDAQ in anticipation of the results. Salk holds a major position in Immune Response.

Into this drama stepped *Science* magazine, journal of the American Association for the Advancement of Science, and its editor-in-chief, Daniel E. Koshland Jr. *Science* called a press conference on the first day of the meeting. The subject was vaccines as treatments for HIV infections. The invited participants were Anthony Fauci, the chief of US AIDS research; Brita Warren, of the Karolinska Institute, Stockholm; Robin Weiss, of the Chelster Beatty Cancer Center, London, and Jonas Salk.

Koshland began the press conference by promising to be brief, but quipping that editors lack genes for brevity. He demonstrated the point by droning on about *Science's* recently established European office, in Cambridge, and the improved service that it would provide for European subscribers. He also suggested that European science journalists should emulate their American counterparts and report on reports published in the AAAS journal.

At last, the participants got to the announced topic of the press conference. Warren offered some very preliminary results favoring immune enhancements. Fauci re-

viewed the political history of the subject in light of a Congressional directive for testing a vaccine product made by MicroGeneSys. Weiss was critical of immune enhancements, and in a pointed barb at Salk declared that he had done some minor consulting work for two biotech firms, adding, "In my country, it is customary to reveal conflicts of interest."

Salk said little in response, insisting that he could not reveal the results of the study scheduled for presentation later in the conference. This dearth of information led this correspondent to protest that the press had been "invited to a strip tease where nudity was banned." Jon Cohen, the *Science* writer who was moderating the discussion at that point, angrily retorted that those who did not like it were free to leave. Lawrence Altman, the *New York Times* medical writer, questioned the purpose of the press conference, and then asked how much *Science* earned and what it hoped to gain from this promotional effort.

Koshland, appearing mystified, explained that *Science* is a non-profit enterprise and that the press conference was nothing more than an innocent attempt to inform the press.

Two days later, Salk's colleague Alexandra Levine presented the results of their study to a packed auditorium. As she spoke, slick public-relations types and stock analysts roamed near the podium talking into their cellular phones.

The news was not stunning: The vaccine product evoked a slight statistically significant improvement in some parameters of blood chemistry. However, there was no demonstration of clinical benefit. Many researchers in the audience declared the data to be nearly meaningless.

Undaunted, Salk declared in interviews and press conferences afterwards that his theory would win out in the end. With characteristic modesty, he compared himself to Christopher Columbus.

The gyrations of Immune Response on the NASDAQ are intriguing. Issued in May 1990 at \$7 per share, the company's stock stood at 24 5/8 on the opening day of the conference, as rumors of a blockbuster announcement swirled through the Berlin meeting.

Salk's coy reticence at the *Science* press conference on the first day was immediately followed by a 3-point drop in the share price. Two days later, when Salk's colleague Levine presented their paltry findings, the stock dropped to 16 and declined the next day to 14 1/2. At the end of June it was around 13.

Many aspects of the spectacle in Berlin invite wonder, including the participation of *Science* and Editor Koshland.—Robert Bazell, *NBC Science Correspondent*, written specially for *Science & Government Report*.

## More IN PRINT: Genetic Resources, Defense, Etc.

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**Managing Global Genetic Resources: Livestock** (277 pp., in the US, Canada, and Mexico \$34.95, plus \$4 shipping for one copy, 50 cents each for more; for ordering information overseas, contact address below), from the National Academy of Sciences Committee on Managing Global Genetic Resources: Agricultural Imperatives, a warning that new technologies for livestock propagation may threaten genetic diversity. The Committee, chaired by Peter Day, Director of the Rutgers University Center for Agricultural Molecular Biology, recommends inventorying and preservation of endangered populations and breeds, especially in developing nations, and creation of a "global mechanism" to conserve livestock genetic resources. The report lists previous Academy publication on genetic preservation

Order from: National Academy Press, 2101 Constitution Ave. NW, Box 285, Washington, DC 20055; tel. 1/800-624-6242; in the Washington, DC, area: 202/334-3313.

**Genetic Information and Health Insurance** (30 pp., no charge), a report with a winning opening line: "One of the ironies in the current health care coverage crisis is that developing more accurate biomedical information could make things worse rather than better." This one comes from the Task Force on Genetic Information and Insurance, created to advise the National Institutes of Health-Department of Energy Working Group on Ethical, Legal, and Social Implications of Human Genome Research. With members drawn from health lobbies, academe, and the insurance industry, the Task Force recommended that "genetic information ... should not be used to deny health-care coverage or services to anyone," and that genetic services should be included in any national health insurance plan.

Order from: Ethical, Legal, and Social Implications Branch, National Center for Human Genome Research, Building 38A, Room 617, 9000 Rockville Pike, Bethesda, Md. 20892; tel. 301/402-0911; fax 301/402-1950.

**Report of the Blue Ribbon Panel on Envisioning the Future of the National Institute of Dental Research (NIDR) Intramural Research Program** (24 pp., plus appendixes; no charge), described as the first outside review of NIDR's inhouse research program in the 44-year history of the Institute, part of the NIH family. Besides that novelty, the report, while acknowledging the importance of basic research, tilts toward "research of ultimate relevance to dental, oral, and craniofacial health." NIDR's ensuing anguish over this intrusion of outsiders was reported in *Science* of May 21. The report was prepared by a panel chaired by William D. McHugh, Director, Eastman Dental Center, Rochester, NY, appointed by NIDR Director Harald Loe.

Order from: Office of Planning, Evaluation, and Communications, National Institute of Dental Research, Building 31, Room 2C34, 9000 Rockville Pike, Bethesda, Md. 20892; tel. 301/496-6705; fax 301/496-9988.

**Defense Industrial Base: An Overview of an Emerging Issue** (GAO/NSIAD-93-68; 16 pp., no charge), by the General Accounting Office (GAO), a negative assessment of what the GAO describes as the Pentagon's faith that "free market forces will guide the restructuring of the defense industrial base." The GAO says the approach is unrealistic for meeting the military's industrial and technological needs, noting that the Defense Department lacks information on shifts of American firms to foreign sites and foreign investments in American industry.

The GAO repeats its prior recommendation that the US "track foreign investment to determine whether and to what extent foreign acquisitions could limit US access to advanced technologies."

Also from the GAO: **Space Station: Information on National Security Applications and Cost** (GAO/NSIAD-93-208; 14 pp., no charge), says the Pentagon not only has no plans for using the Space Station, but "In fact, for many of DOD's space research needs, the facilities of Space Station Freedom would be less suitable than those currently available on the Space Shuttle." Estimating the costs of the Space Station, the GAO expresses skepticism about NASA's March estimate of \$31.3 billion, noting that the figure did not include "substantial budgetary resources required to successfully complete development and support station over its planned 30-year life." By the GAO's reckoning, all costs through the year 2027 would total "at least \$121 billion."

Having barely survived in the House last week, the Space Station has a low life expectancy.

Order from: USGAO, PO Box 6015, Gaithersburg, Md. 20884-6015; tel. 202/512-6000; fax 301/258-4066.

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# IN PRINT: Foreign Students in US, Risk Studies, NSF

The publications listed are obtainable as indicated—not from SGR.

**Foreign Participation in US Academic Science and Engineering: 1991** (NSF 93-302; 126 pp., no charge), the National Science Foundation's first assemblage of data on this subject since publication in 1986 of *Foreign Citizens in US Science and Engineering: History, Status, and Outlook*. Reporting "rapid growth" in graduate enrollments of non-US citizens following a slowdown in the mid-1980s, NSF charts an increase from 73,616 in 1984 to 106,764 in 1991—a rise from about 28 to 31 percent of all graduate students in science, engineering, and health fields.

The foreign students, however, were heavily concentrated in a few fields, high among them engineering, where they accounted for 47 percent of graduate enrollments and in mathematics, where they totaled 55 percent. They were also heavily represented in postdoc appointments, filling nearly half such posts in 1991, up from about one-third a decade earlier. Nearly two-thirds of the foreign students at all levels of higher education were from Asia, with enrollees from the People's Republic of China rising from nearly zero in the 1970s to first place in 1991, with 40,000 students. Japan was second, with 36,000, and Taiwan third, with 34,000. Iran, near the top of the list in 1984 with 20,360 students, fell to 15th in 1991, with 6260. The report, by J.G. Huckenpohler, of the NSF Division of Science Resources Studies, tracks undergraduate, master's, and PhD enrollments by home country, university, and discipline.

Order from: NSF, Division of Science Resources Studies, 1800 G St. NW, Washington, DC 20550; tel. 202/634-4787; fax 202/634-4683; BITNET: pubs@nsf, INTERNET: pubs@nsf.gov

**Risk and the Environment: Improving Regulatory Decision Making** (150 pp., no charge), the next to last report in a long series from the Carnegie Commission on Science, Technology, and Government, which, as planned at conception, officially dissolved on June 30 after five years of blue-ribbon kibitzing on a variety of sci/tech issues, though some residue lingers on. The *Risk* study says the Executive Office of the President should strengthen its authority and capacity for dealing with environmental and risk-related policies, mainly through collaboration between the Office of Science and Technology Policy and the new White House Office of Environmental Quality. Other recommendations call for beefing up the scientific skills of regulatory agencies and simplification of rule-making procedures. (Still to come from the ghost of Carnegie: a final report on Congress and science).

Palpably surviving the Carnegie enterprise, with hopes of carrying on, is a monthly newsletter launched last year: *Science, Technology, and Congress*; subscriptions available without charge from the old address: Carnegie Commission on Science, Technology, and Government, 1616 P

## SGR Summer Schedule

The next issue of *Science & Government Report* will be published August 1, 1993.

St. NW, Suite 400, Washington, DC 20036; tel. 202/332-2221; fax 202/332-2226.

Order the *Risk* report from: Carnegie Commission on Science, Technology, and Government, 437 Madison Ave., New York, NY 10022; tel. 202/207-6335; fax 212/838-6019.

**US Geological Survey [USGS] Yearbook: Fiscal Year 1992: Partnerships in the Earth Sciences** (123 pp., \$9.50), brief reports on USGS activities in water resources studies, mapping, geologic investigations, international programs, plus budget data, an organization chart, list of recent publications, etc.

Order from: USGS, Map Distribution, Box 25286, Building 810, Federal Center, Denver, Colorado 80225. No phone orders; prepayment required.

**The Mission of the National Science Foundation** (103 Congress, first session, No. 2; 310 pp., no charge), text of a hearing in March, the first, and only one so far, in an announced series on national science policy, conducted by the Subcommittee on Science of the House Science, Space, and Technology Committee. The proceedings were fuzzily focused on recent reports from the loftier levels of the establishment:

*A Foundation for the 21st Century*, by the Commission on the Future of NSF;

*Renewing the Promise: Research Intensive Universities and the Nation*, a swansong of the Bush-era President's Council of Advisors on Science and Technology;

*Enabling the Future: Linking Science and Technology to Societal Goals*, by the Carnegie Commission on Science, Technology, and Government, and

*Fateful Choices: The Future of the US Academic Research Enterprise*, from the National Academy of Sciences.

Full texts of these reports are included in the Congressional document, as are the prepared statements and far briefer spoken words of half a dozen witnesses associated with the preparation of the reports. The hearing was typical of Congressional committee proceedings on backburner topics: hurried, rambling, and with scant attendance from the Subcommittee, which numbers 13 rushing-about, over-committed members. However, Chairman Rick Boucher (D-Va.), displaying diligence and patience, was there for all 2 hours and 20 minutes of the hearing. No further hearings in the announced series have been scheduled.

Order from: US House of Representatives, Committee on Science, Space, and Technology, 2320 Rayburn Bldg., Washington, DC 20515; attn. Laura Geer; tel. 202/225-6371.

(Continued on Page 7)



